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ABSTRACT

This study examined the decision-making process of prospective teachers to determine to what extent authoritarianism influences decisions about the validity of categorical syllogisms with attitudinally relevant conclusions. The Minnesota Teacher Attitude Inventory (MTAI) and the California F Scale were administered to 100 education students to determine attitudes and degree of authoritarianism. Then selected statements from the MTIA were used as conclusions for syllogisms constructed for the Syllogism Test, which was administered before and after programed instruction in judging the validity of conclusions. Findings indicated that subjects high in authoritarianism make more attitude errors in reasoning. Prcgramed instruction reduces attitude errors in reasoning for both high and low authoritarians, with the reduction being significantly greater for high authoritarians. These findings have implications for developing self-awareness of the part of the teacher in order to provide a logical rather than emotional response to difficult classroom situations. (RT)

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Authoritarianism and Time as Influences on Decision Making

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Authoritarianism and Time as Influences on Decision Making

SUMMARY

This study examined the decision making process of prospective teachers to determine the extent time and authoritarianism influence the decisions about the validity of categorical syllogisms with attitudinally relevant conclusions. Conceptually, these decisions are viewed as the result of intellectual skills and attitudes about the conclusion. Research reported (Traylor, 1968) indicated that prospective teachers could improve their ability to make these decisions (reduce attitude errors) by strengthening intellectual skills by programed instruction and/or the induction of a set. The questions being asked are: does carefully guided practice in solving syllogisms and the induction of a set improve reasoning attitude structured syllogisms for authoritarians and does this improvement persist over a period of time?

The hypotheses may be summarized as follows: (1) carefully guided practice in the solution of syllogisms by means of programed instruction, and the induction of a set will improve reasoning about attitude structured syllogisms by low more than by high authoritarians; (2) the improvement will reduce with time.

100 Ss from 3 classes were used. The MTAI and California F Scale were administered as a part of the regular class routine. Selected statements from the MTAI were used as conclusions for syllogisms constructed for the Syllogism Test, which was administered mid-semester to determine attitude errors. Logically valid conclusions that the S disagreed with and judged to be invalid, or logically invalid conclusions that S agreed with and judged to be valid, were classified as attitude errors. Authoritarianism were determined by the F Scale. High and low authoritarians were assigned at random to either immediate or delayed groups. Programed instruction was given each S; the Syllogism Test and set was given immediately after the program or delayed one week.

The data were analyzed to determine the influence of authoritarianism and time on the reduction of attitude errors. Analysis of covariance of a 2 x 2 table was used to test the hypotheses. Hypothesis one was supported. The second hypothesis was not supported when considering attitude errors. An analysis of non-attitude errors demonstrated that significantly more errors were made after one week.

Briefly the findings show: (1) High Authoritarian Ss make significantly more attitude errors (2) the strengthening of intellectual skills with programed instruction and set reduces the number of attitude errors for both groups, significantly more for High Authoritarian. (3) Time reduced the strength of the intellectual skill in reducing non-attitude errors and (4) No difference was found in the influence of time on attitude error reduction. A possible explanation of this is methodalogical "Set", which has been demonstrated as effective in reducing attitude errors, was reduced in both groups prior to the reasoning test.

Chapter One

The Problem

It's Context

The possibility of viewing the teacher as a decision maker seems to hold promise for educational psychologists, researchers and others interested in developing a conceptual understanding of the teacher's behavior in the classroom. In a sense the pre class decisions made by the teacher are translated into a lesson plan. The decisions are the result of the teachers understanding of a multitude of factors including: the students, the learning process, the norms of the school social system, the understanding of curriculum, etc. as well as the values opinions and attitude of the teacher.

Other decisions of a more spontaneous variety are made by the teacher. These are behaviors initiated by the events of the class. Behavior of this classification are frequently triggered in stimulus-response fashion without the weighing of alternations. The emotional response to a specific situation in the classroom is frequently the motive for a "natural" overt action on the part of the teacher--unplanned, and occasionally inappropriate, that is, on the basis of what the teacher "knows" about student behavior, "doing what comes naturally" should not have been done.

These two general classes of decisions suggest that decisions are made utilizing two general "systems" of elements. The model of the process is represented by Bross (1961) and includes the recognition that in making decisions the first step is to determine possible actions; these actions are then considered in terms of possible out comes. At this point the probability of an out come is determined by information, skills, habits, etc. available to the decision maker. These cognitive factors are considered together with affective factors (value) such as attitudes, opinions, etc. (See Figure 1) In a sense our concern is studying the relation of these systems (pre-

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Insert Figure 1 about here

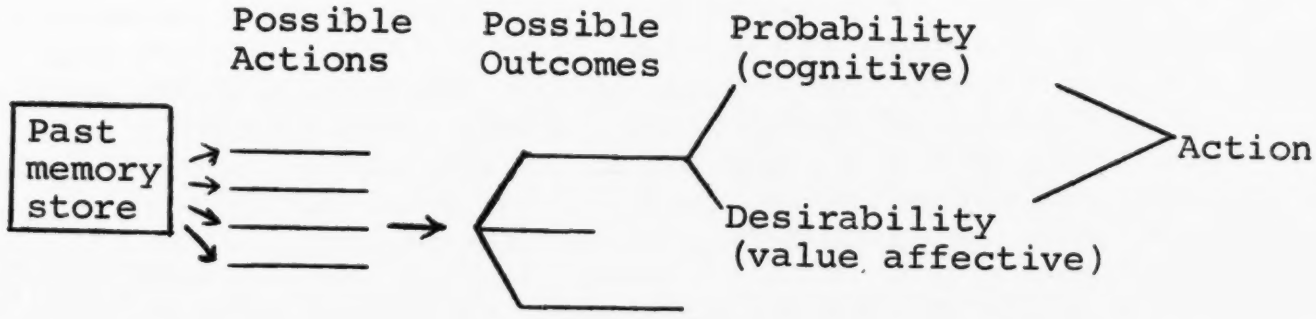

Figure 1. Teacher decision making model (Bross, 1961).

diction, cognitive and value, affective in the making of decisions.

Theoretical Background and Literature Review

Decision Making

Teacher decision making should be viewed within the overall context of the process of decision making. Edwards (1960) speaks of decisions (choices) as the end products of a series of processes of three types. First, we acquire and organize information about a problem situation. This means more than perceiving the situation, for it means recalling relevant information and putting it all, perceived and recalled, together into a structure which might be called understanding the situation. Second, the information is processed and transformed in such a way as to produce a set of alternative courses of action, one of which the problem solver must choose. The third and final process is the choice and execution of one of these courses of action.

Four classes of determiners influence the third process: first, boundary conditions which are environmental facts which limit what can be done; second, values which are attached to the ends which the problem solver seeks to achieve or avoid; third, probabilities or a given course of action which will achieve a particular value; and fourth, strategies or a set of rules by means of which a person uses information in order to seek or avoid values.

Simon (1957) has indicated the task of decision involves three steps. These steps are: the listing of all the alternative strategies; the determination of all the consequences that follow each of these strategies; and comparative evaluation of these sets of consequences. The function of knowledge in the decision making process is to determine which of the consequences follow which strategy. He views a relation of value, experience and behavior as a means-end chain. A means-end chain is a series of anticipations that connect a value with the situations realizing it and these situations in turn with the behaviors that produce them.

Bross (1961) has indicated that decision requires the selection of a course of action. This is elaborated as follows: (1) Two or more alternative courses of action are possible. Only one of these actions can be taken. A group of actions may be combined and hence considered as a single action. (2) The process of decision will select from these alternative actions a single course of action

which will actually be carried out. (3) The selection of a course of action is to be made so as to accomplish some designated purpose. (4) Decision is predictive. To make a decision one must anticipate the future.

When confronted with a choice one anticipates the outcome of each choice in terms of his purposes or desires. At this point, one makes decisions in terms not only of the situation at present, but also of the anticipation of the future. The anticipation of the future is influenced by the kinds of experiences relevant to the decision that the individual has to draw upon from the past, the skills, information, concepts, and attitudes.

Brim et al. (1962) considered the decision making process and problem solving as essentially the same with difference only in the matter of emphasis. Their description of the problem solving process parallels their description of the decision making process.

Problem Solving Process	Decision Making Process
1. A problem must be identified.	1. Identification of the problem.
2. Information must be gathered.	2. Obtaining necessary information.
3. New courses of action must be proposed.	3. Production of possible solutions
4. Each action must be evaluated in terms of its possible success.	4. Evaluation of such solutions.
5. Some preferential ordering must be made.	5. Selection of a strategy for performance.
6. Performance of one or more actions must occur.	6. Actual performance of an action or actions and subsequent learning or revisions.

The above discussion (Edwards, 1960; Brim et al., 1962) suggests considering problem solving within the framework of decision making. In this study the experimenter accepts the view of the essential sameness of decision making and problem solving.

The descriptions above suggest the following characteristics of the decision process: (1) There are two or more alternative courses of action possible. Only one of these courses of action can be taken. A group of actions may be combined and considered as a single action. (2) The process of decision will select from these alternative actions a single course of action which will be carried out. (3) A course of action is selected which will

accomplish some designated purpose. Purposive behavior means goal-oriented behavior. Bross (1961) defines it as: "The purpose will be to choose an action which will lead to a desirable situation in the real world of the future." The question of whether the decision is satisfactory depends upon some future time. Decisions and time sequences are obviously inseparably paired and the decision itself must be considered as part of the larger time process sequence. (4) A decision is predictive. The future must be anticipated. The decision maker with the most complete knowledge of future outcomes is in the best position to predict.

The teacher as a decision maker.

The possibility of viewing the teacher as a decision maker has been suggested by McDonald (1965), Smith and Geoffrey (1965) and Wientge (1965). Teaching often involves doing or not doing something. "Choice behavior" is part of the decision maker's conceptual repertory. It is also part of the teacher's schema. Lying behind the choice are the teacher's objectives. Objectives are goals and values to the decision maker. While many times the decision must be made within a framework of school norms, eventually the decision is made by the teacher in terms of his understanding of the norms, his interpretation of the immediate situation and the probable outcomes of a particular course of action.

Smith and Hudgins (1964) emphasize the importance of knowledge of educational theory and research findings in order for the practicing teacher fully to conceptualize decision alternatives.

> "Accordingly, the teacher should have a theoretical foundation together with a set of conceptual tools useful in analyzing problems and in suggesting ways of proceeding. In addition, she should have a knowledge of research evidence which aids in selecting among the possible courses open to her."
>
> Smith and Hudgins (1964, p. 3)

It is suggested that actions made by teachers, decisions relevant to actions, would be better, more appropriate, if teachers had in their background relevant theory and concepts to draw upon. Further the implication is that teachers would draw upon this background of stored information to make decisions.

Stated simply, the teacher as a decision maker draws upon the cognitive and affective experience accumulated in the "memory store" to evaluate possible outcomes of a decision in terms of desirability and probability. The final step is the application of the criterion, based on goals and purposes, to determine the actual selection. In the case of the teacher the broad criterion can be thought of as actions which bring about desirable behavioral changes. This would correspond to the broad educational goals and objectives of a school system. The task of decision making is the process of arriving at a conclusion reached from premises which may be of two different kinds: value premises and factual premises. (Simon, p. 5).

Syllogistic reasoning and the decision process

Intrepreting the work in this study in light of the previous observations, one views the deductive reasoning process involved in the solution of categorical syllogisms as a special case of decision making. As noted previously the teacher as a decision maker draws upon the cognitive and affective experience accumulated in the "memory store" to evaluate the possible outcome in terms of probability and desirability. The adequacy or quality of the prediction (probability) is influenced by the knowledge, skills, and habits previously acquired. The judgement of the desirability depends in part on the values, attitudes, or convictions that are salient in the decision. Figure 2 presents a model relating the essential phases of the decision process in solving categorical syllogisms.

Insert Figure 2 about here

Syllogistic reasoning is an intellectual skill. Bloom et al. (1956) refer to intellectual skills as "organized modes of operation and generalized techniques for dealing with materials and problems. Some problems may require specialized and technical information at a rather high level such that specific knowledge and skill in dealing with the problem and the materials are required (p. 204)." Syllogistic reasoning skill will vary among individuals. The variability of this skill will in part account for the correctness of decisions as to the validity or invalidity of the syllogisms. The improvement of this skill would increase the probability of the appropriate decision by providing one with the "modes of operation and generalized techniques for dealing with the problem." It would also influence the "desirability" dimension. By improving the knowledge of the logical form of a syllogism the "desirability" of choosing a response congruent with the logical form increases.

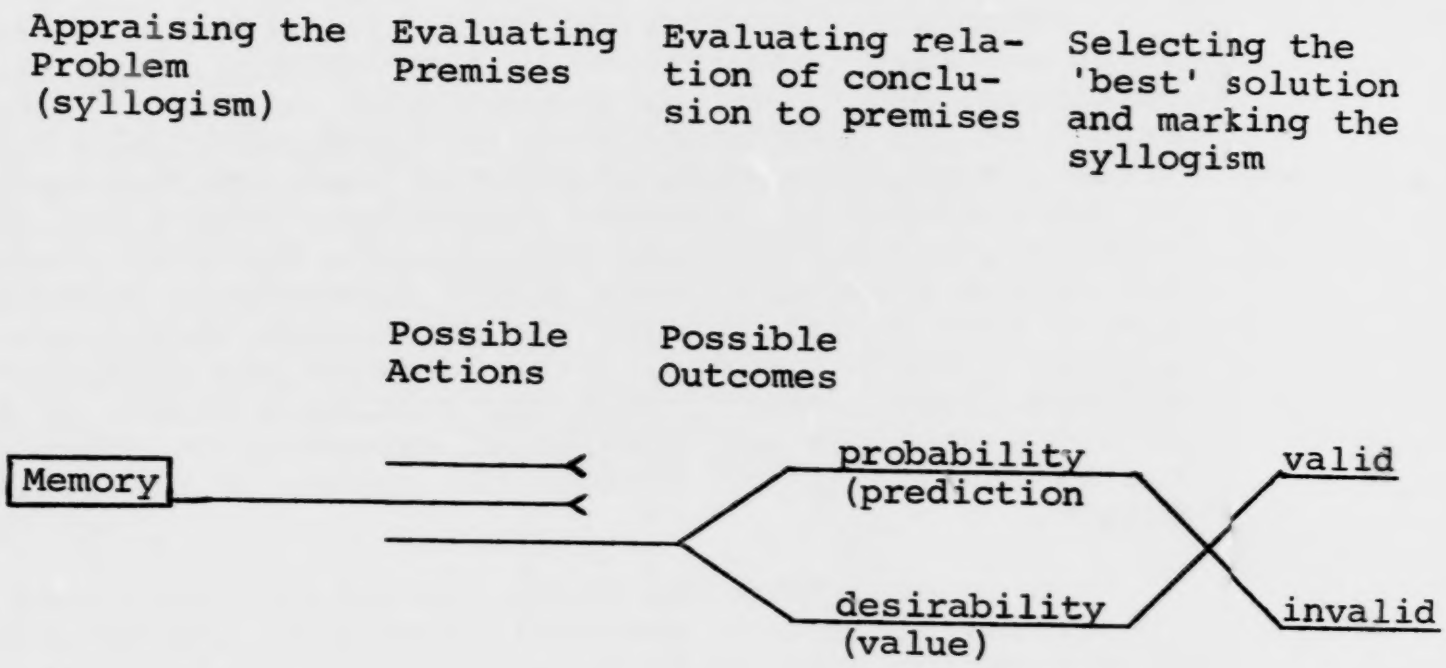

Figure 2. Model showing decision process for solving attitude structured categorical syllogisms for validity or invalidity.

In summary, then, the assumption is made that the solution of categorical syllogisms follows the phases of the decision process and the treatment of the methodology and results of this study are governed accordingly. The terms 'solution of categorical syllogisms' and 'deciding or determining the validity or invalidity of the conclusions' are interchangeable in light of the forgoing discussion.

The Character of Attitude

Krech and Crutchfield (1948) have defined an attitude as an enduring organization of motivational, emotional, perceptual and cognitive process with respect to some aspect of the individual's world. Newcomb (1965) suggests "from a cognitive point of view an attitude represents an organization of valenced cognitions; from a motivational point of view an attitude represents a state of readiness for motive arrousal. Peak (1955) agrees that attitudes play a role in determining the motivation that leads to action. Others (Heider, 1946; Woodruff and deVesta, 1948; Hillard, 1950) suggest that the cognitive aspect of a person's attitude may consist of expectations about how his values are served through the agency of the attitude object.

In general from the above concepts of attitudes (readiness for motive arrousal, a role in the determination of motivation that leads to action, how one's values are served by the agency of the attitude object) one would expect attitudes to exercise influence on behavior. Newcomb (1965) also suggests "broadly speaking, we would not expect any simple and perfect correspondence between an attitude and a relevant behavior because (1) behavior is a product not only of attitudes but of the situation at present as well; and (2) attitudes relevant to a situation are often multiple." Rotter (1954) suggests that any situation has within it possibilities for the satisfaction of many needs. Which of the needs an individual will strive to satisfy depends on two factors: (1) the value that the satisfaction of a given need has for the individual and (2) his expectancy that his behavior will actually lead to satisfaction.

Rosenberg (1956) maintains when a person has a relatively stable tendency to respond to a given object with either positive or negative affect, such a tendency is accompanied by a cognitive structure made up of beliefs about the potentialities of that object for the attaining or blocking of the realized value states; the sign and extremity of the affect felt toward the object are correlated with the content of its associated cognitive structure.

Rosenberg (1960) also suggests that the affective and cognitive components of attitude are in a stable state when they are mutually consistent; when the affective and cognitive components are mutually inconsistent, the attitude is in an unstable state and will undergo spontaneous reorganizing activity until such activity eventuates in either (1) the attainment of affective-cognitive consistency or (2) the placing of irreconcilable inconsistency beyond the range of active awareness.

Growing out of the work of Festinger (1957) on dissonance theory. Brehm (1960) has investigated a special case of dissonance--that which arises from discrepant behavior, defined as the opposite of behavior which is appropriate to the individual's attitudes and beliefs. A person who engages in such behavior is assumed to experience dissonance, a motivating condition that can change one's attitudes and beliefs. The greater the amount of dissonance the greater the amount of change likely to result.

Brehm reports evidence, however, that the performance of an act inconsistent with one's attitudes and beliefs does not necessarily produce changes in the attitude or belief. In terms of "dissonance" analysis this situation can be handled by "enhancing the negative consequence that would have occured if he had not complied" or by "changing the apparent rewards gained by compliance."

Newcomb (1965) indicates that the above is characteristic of many. "There is evidence we carry around with us in cognitive storage many imbalanced (inconsistent, dissonant) beliefs and attitudes toward objects that we ourselves would recognize (with no promptings from the outside) are logically related and imbalanced, yet that cause no discomfort until something occurs to render them all salient at the same time."

The motivational character of attitudes can be assumed to have a bearing on all aspects of behavior including reasoning. Attitudes tend to be supported by previous experiences. The sign (positive or negative) and degree of the affect felt toward the object are correlated with the content of its associated cognitive structure.

Relation of attitudes, opinions, values to reasoning

Studies that describe the influence of attitudes, opinions, values or beliefs on the solution of syllogisms or on reasoning are described by Janis and Frick (1943), Morgan and Morton (1944), Lefford (1946), Thistlethwaite (1950), Henle and Michael (1956) and Thouless (1959).

Janis and Frick (1943) examined the influence of attitudes one held toward the conclusion of syllogisms on the ability to make correct decisions about the validity of the conclusion. They found that the attitude one held toward the conclusion of a syllogism resulted in more errors in judging the correct conclusion. The errors were in the direction of the attitude toward the conclusion.

Morgan and Morton (1944) studied the influence of personal convictions on the selection of conclusions. Their conclusions were: "in a general way we may conclude that when a syllogism contains nothing to arouse a response based on personal convictions, the selection of a conclusion to two premises is determined about one-half by atmosphere effect and one-fourth each to logic and chance factors. When an issue is injected which relates to personal opinions, wishes, fears or convictions of an individual, the distortion shifts from the atmosphere effect of the syllogism to the meaning involved in the terms of the syllogism. Logic and chance factors play a slightly smaller part. Atmosphere effect contributes about one-fourth, logic and chance each about one-fifth and personal convictions of the respondant contribute about 35 percent."

Lefford (1946) used twenty syllogisms with emotionally toned content and twenty syllogisms with non-emotional content and asked his Ss to judge their validity. His findings showed: (1) Most Ss solved neutral syllogisms more correctly than emotional ones. (2) Solving emotionally toned syllogisms first has a deleterious effect on the results of the subsequent solution of neutral syllogisms. (3) Attitudes, beliefs and feelings influence reasoning in the direction of these convictions.

Thistlethwaite (1950) in testing the hypothesis that attitude was a determinant of reasoning sampled college students from sevel colleges and universities in different parts of the United States. A test was constructed containing arguments, the contents of which were either high in emotional value or low (neutral). A measure of distortion produced by attitudes and beliefs was available from differential responses to emotional and neutral items. The emotional items contained statements and conclusions about which highly ethnocentric respondents have strong attitudes and beliefs. High ethnocentric samples differed significantly in their distortion of reasoning. Thistlethwaite concluded that attitudes were factors in distortion of reason.

Gordon (1953) examined the extent to which a person's attitude on a subject may interfere with his ability to think logically on that subject, and how sensitive a syllogistic reasoning test is in indicating attitude bias on a subject. Even though it was carefully explained to the subject that "he need not necessarily agree with the conclusion but that he is to follow where his logic leads him"[1] it was found that the individual attitude in a large minority of cases (11 out of 28) interferes with the reasoning process. The syllogistic reasoning test was not found to be an effective way to measure bias.

Henle and Michael (1956) challenged the conclusions of Morgan and Morton (1944). On two separate occasions, using two different groups and two different sets of syllogisms, they failed to find the correspondence between choice of conclusion and attitudes toward conclusions that was suggested by Morgan and Morton.

Thouless (1959) also studied the extent to which an individual would judge an argument sound if he agreed with the conclusion and unsound if he disagreed with the conclusion. His results were conflicting in that one group showed the results expected; another group of graduate students, however, did not show results in the direction expected.

The influence of attitudes on the solution of problems in the form of syllogisms has conflicting evidence. A study of the methods used by Henle and Michael (1956) and Thoules (1959) might suggest an explanation for their disagreement with the previously reported studies. After solving the syllogisms, the Ss were questioned to determine their attitudes toward the syllogism. (Henle and Michael, 1956). Thouless' Ss were presented syllogisms with the conclusion underlined and were asked to indicate their agreement with the conclusion before they were asked to judge the 'soundness' of the conclusion. Thouless suggests that his procedure perhaps caused the group to approach the testing with a "state of preparedness." Festinger (1964) suggests that after a decision is made there is a tendency for a change in the beliefs of the individual to change to support the decision. Walster (1964) demonstrated, however, that immediately after the decision

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[1]The directions may have induced a set which caused the attitude to be less salient in these reasoning problems. That this may be true is supported by Traylor (1968).

there may occur a period of 'regret' in which the individual considers the alternative to his choice more attractive. The influence of the temporal sequence or the possible set involked by the underlined decisions has not been adequately considered and may have an influence on the results of these studies.

Instruction and the solution of syllogisms

The relationship of college training in logic to solving syllogisms was investigated by Morgan and Morgan (1953). Their conclusion was that in the majority of cases, untrained Ss cannot be expected to think as logically as trained Ss. Their results may be considered spurious due to the fact that there was a significant difference (1% level) in intelligence in favor of their 'with logic training' group.

Henle and Michael (1956) attempted to clarify the task of performing syllogistic reasoning. They provided instruction, using diagrams in solving syllogisms. They used fifteen Ss, some of them college graduates, enrolled in a public speaking course. The Ss asked questions "until it was entirely clear." The results showed improvement in ability to solve syllogisms correctly to more than 80%. Two prior treatments with less adequate instructions had given correct solution percentages in the neighborhood of 30% and 50% correct solutions.

Wientge (1965) demonstrated that training, by using programed instruction materials, in solving categorical syllogisms, resulted in improved performance. By carefully guided practice through the use of programed instruction in solving categorical syllogisms, using Euler diagrams, Weintge's Ss improved in their ability to solve categorical syllogisms. By using programed materials it is possible to replicate the study and control the instruction that was not possible from the general looseness of the 'instruction' as described in the Henle and Michael study. Traylor (1966), utilizing Wientge's program, demonstrated a reduction of both attitude and non-attitude errors in the solution of syllogisms.

The nature of the instruction utilizing diagrammatic materials suggests the concept of translation as described by Bloom et al. (1956). "Translation behavior occupies a transitional position between the behaviors classified under the category of knowledge and types of behavior described under the headings of interpretation, extrapolation, analysis, synthesis, application and evaluation (p. 91)." A specific illustration of a translation objective would be the ability to translate relationships expressed in symbolic form, including illustrations, maps, tables, diagrams, graphs and mathematical and other formulas,

to verbal forms and vice versa (p. 92). The programed instruction using Euler diagrams to solve categorical syllogisms provides carefully guided practice and includes practice in translation from figural to semantic forms. Conceptually, the instruction in solving categorical syllogisms will improve the probability of correct decisions by adding to the skills available to make the judgements.

As suggested previously, syllogistic reasoning is an intellectual skill. Skills can be improved by practice. The studies above suggest that instruction can improve syllogistic reasoning. The programed materials of Wientge provide a carefully guided practice in analysis of premises, representing the relationships by diagrams, comparing the diagrams with the conclusions, and making a judgement about the similarity of the diagrammatic relationship with the conclusion. Errors are immediately discovered and corrected. In this program the S not only is provided with information but immediately translates the information into use.

Set and Problem Solving

The phenomonen of set has been studied in a multitude of situations. The importance of set in perception, problem solving, concept attainment and learning has been demonstrated (Gibson, 1941; Johnson, 1955). The following studies illustrate the relationship of set to problem solving.

Maier (1933) found that giving instructions on how to reason increased the number of successes in solving problems from 18.6 percent to 37.4 percent of the Ss. The instructions were: (1) locate a difficulty and try to overcome it. If you fail get it completely out of your mind and seek an entirely different difficulty. (2) Do not be a creature of habit and stay in a rut. Keep your mind open for new meanings. (3) The solution pattern appears suddenly. You cannot force it. Keep your mind open for new combinations and do not waste your time on unsuccessful attempts. Maier interprets the result as indicating that "when Ss are carefully instructed to guard against habitual activities and persistant directions, but are on the alert for new points of view, there is increase in reasoning ability." Reasoning is at least in part the overcoming or inhibiting of habitual responses. By 'habitual' Maier refers primarily to habits formed during the attempted solution of the problem.

Luchins (1942) demonstrated how a set that is useful in solving the first in a series of arithmetic problems may become a handicap in solving later problems. After solving a series of problems that required a particular sequence of events for the solution, the Ss continued to

use the same procedure for solving problems that could be solved with the original set were failed by the majority of Ss. When the direction "don't be blind" was given to the Ss prior to the critical problems, the indirect procedure was reduced and the failure on the problem that could not be solved using the original way was reduced.

Hunter (1956) studies the influence of set induced by instructions on solution of anagrams. Ss were given lists of nouns. Some lists were specified as to animals, trees, birds, fruit, etc. The others were not. The average time required to solve the specified lists was three seconds compared to 12.5 seconds for the unspecified. There were 35 failures on the specified lists as opposed to 129 from the unspecified.

A conceptualization of set that seems to account for the variety of situations in which it has been studied is advanced by Maltzman (1962). He suggests that there are two kinds of set and these may be distinguished on the basis of their antecedent conditions and functional relations to consequent behavior changes. These correspond to state and process variables. The learning of response classes or the acquisition of habit strength by a class of stimuli for the elicitation of a particular class of responses is of the state variable kind. A second kind of set that has been studied employs task instructions which produce a change in the compound habit hierarchy by increasing the reaction potential of a class of responses through arousal of their anticipatory goal response.

Postman and Senders (1946) discuss sets not only as determiners of associative habits but also as habits themselves. One learns by virtue of a mental set to learn, but one also learns to have a mental set. They generalized that a concept is needed to refer to the fact that preparedness or intention (usually experimentally induced by means of instructions to the S) is an important determinant of the formation of associations. The concept is set. Sets not only determine the cause of learning but also may themselves be the result of previous learning. Thus, set induced by instruction should influence the solution of attitude structured syllogisms. It should tend to check the influence of attitudes in solving the syllogisms and cause the skills of reasoning to become salient.

Time and its influence on extinction

One of the variables traditionally included in discussions of extinction and forgetting is time. Learning has been demonstrated as reducing over a period of time. Discussions and learning include treatment of continuous

and intermittant reinforcement with continuous reinforcement being related to skill acquisition and intermittant related to permanence in learning. The Ss who have participated in programed instruction have been exposed to a continuous reinforcement procedure. (Luchins, 1942, study of problem solving suggested that by solving problems in a particular way a habit or "einstellung" developed that persisted to problems that immediately followed).

It is expected that the programed instruction will develop skills (or habits) that will result in the decrease of attitude errors for these Ss taking the Syllogism Test one week later, when the skills developed by the program are weakened, will make more errors.

Authoritarianism and its relation to reasoning

Authoritarianism is considered as one class of personality traits related to prejudice (Adoruo, et. al., 1950). The predjudice is related to acquired needs of the individual which predispose time to develop attitudes supporting these needs. The assumptions of The Authoritarian Personality are that highly authoritarian persons have been subjected to strict parental control, that as children they learned to acquiesce in this control and depend on it, and that they retain some of this resentment (often without recognizing or accepting it) against such control, which is expressed in the form of hostility toward those who can be safely attacked. Thistlethwaite's (1950) study, previously cited, supports the greater distation of reasoning by Ss high in predjudice.

Summary

The deductive reasoning in deciding the validity of attitude structured syllogisms has been placed in the framework of the decision making model. The problem solving process and decision making process are considered essentially similar. The problem of the decision maker in solving the syllogism is to evaluate the conclusion in terms of the propositions (premises) and make the appropriate action, is the conclusion valid or invalid. The decisions will be influenced by the intellectual skills and habits as well as the attitudes the decision maker has toward the substantive content of the syllogism. The intellectual skills can be strengthened by programed instruction. Then skills will reduce with time. The attitudes of authoritarian Ss will be more salient and result in a greater distortion of reasoning.

Conceptual hypothesis

Figures 3 through 7 are presented to illustrate the conceptual hypotheses of the study. Figure 3 suggests that the correct decision about the validity of attitude structured syllogisms is a result of cognitive factors including intellectual skills (syllogistic reasoning ability) and affective factors such as attitudes, opinions and values.

Insert Figure 3 about here

Figure 4 indicates that carefully guided practice (programed instruction) will improve intellectual skills. Figure 5 proposes that the induction of a set increases the saliency of intellectual skills and controls or check the influence of attitude as a motive.

Insert Figure 4 & 5 here

Figure 6 indicates that carefully guided practice and set will result in the improvement of decisions about the validity of attitude structured syllogisms by improvement of the intellectual skill of syllogistic reasoning, making this skill salient in the presence of affective stimuli by checking the influence of attitudes on reasoning.

Insert Figure 6 about here

Finally Figure 7 indicates that time will reduce the significance of programed instruction and authoritarianism will increase the saliency of attitude in the solution of attitude structured syllogisms.

Insert Figure 7 about here

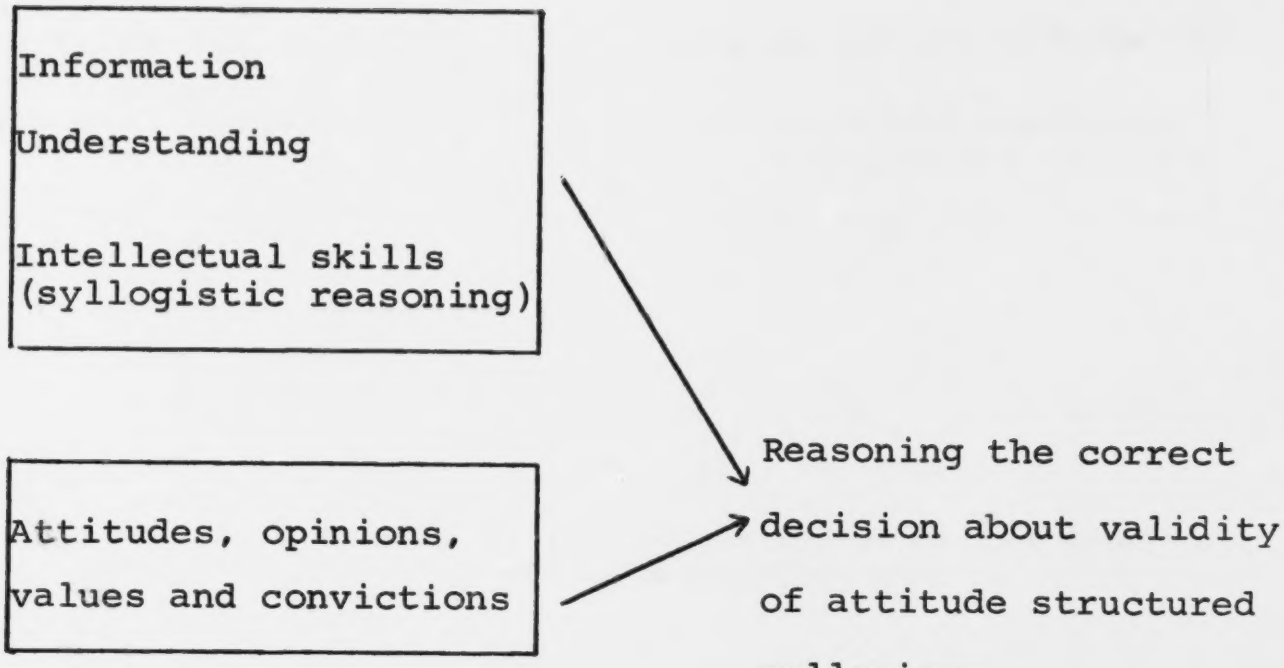

Figure 3. Relation of intellectual skills and attitudes to syllogistic decisions.

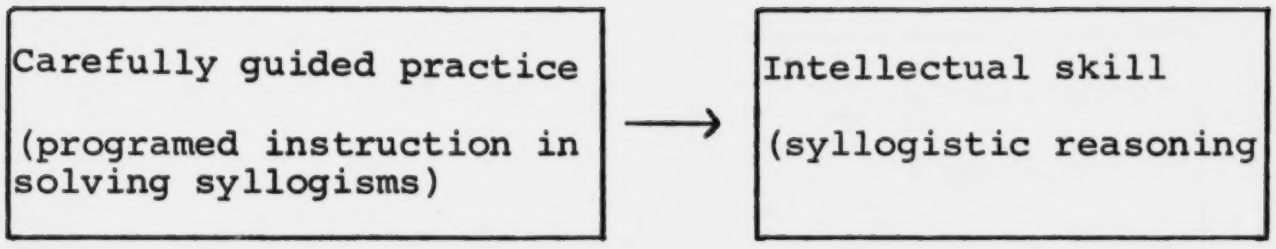

Figure 4. Relation of carefully guided practice to intellectual skill.

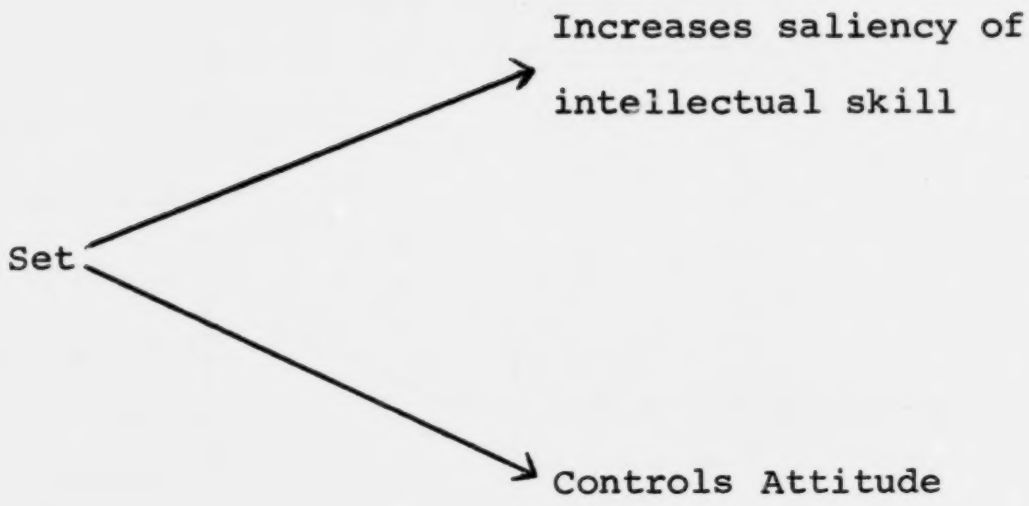

Figure 5. Relation of set to intellectual skill and attitude.

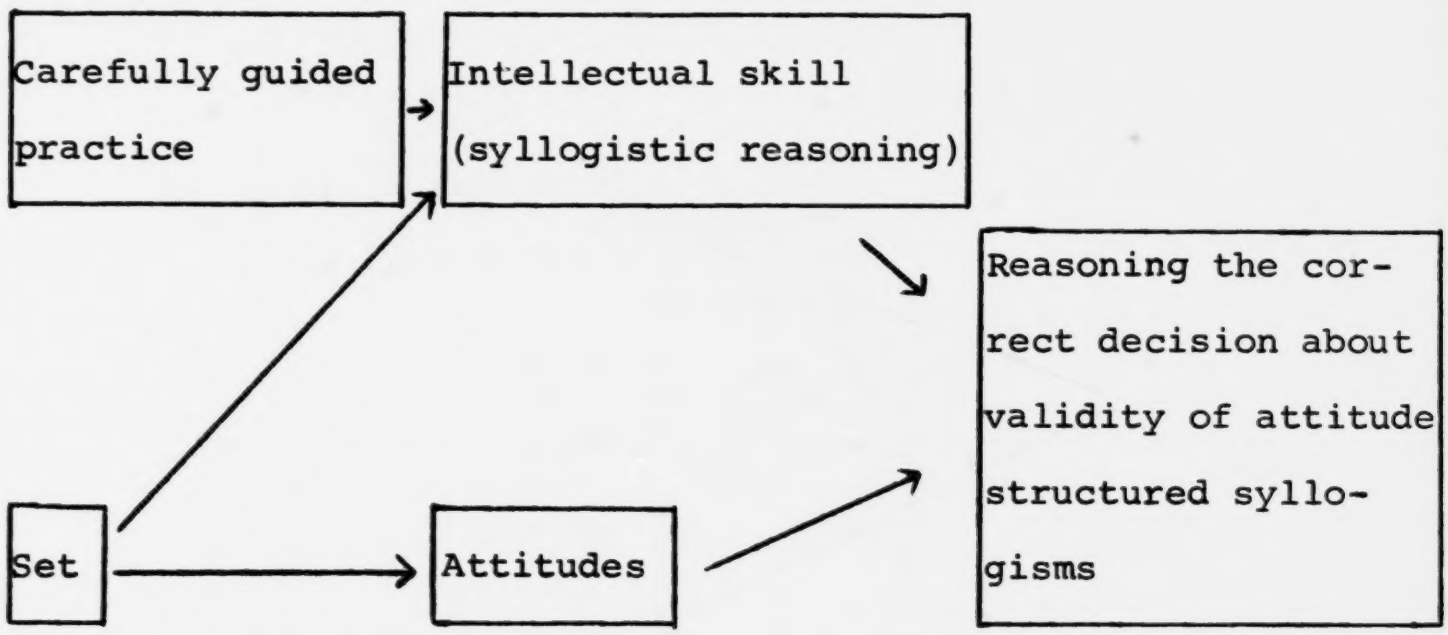

Figure 6. Relation of carefully guided practice and set to syllogistic decision.

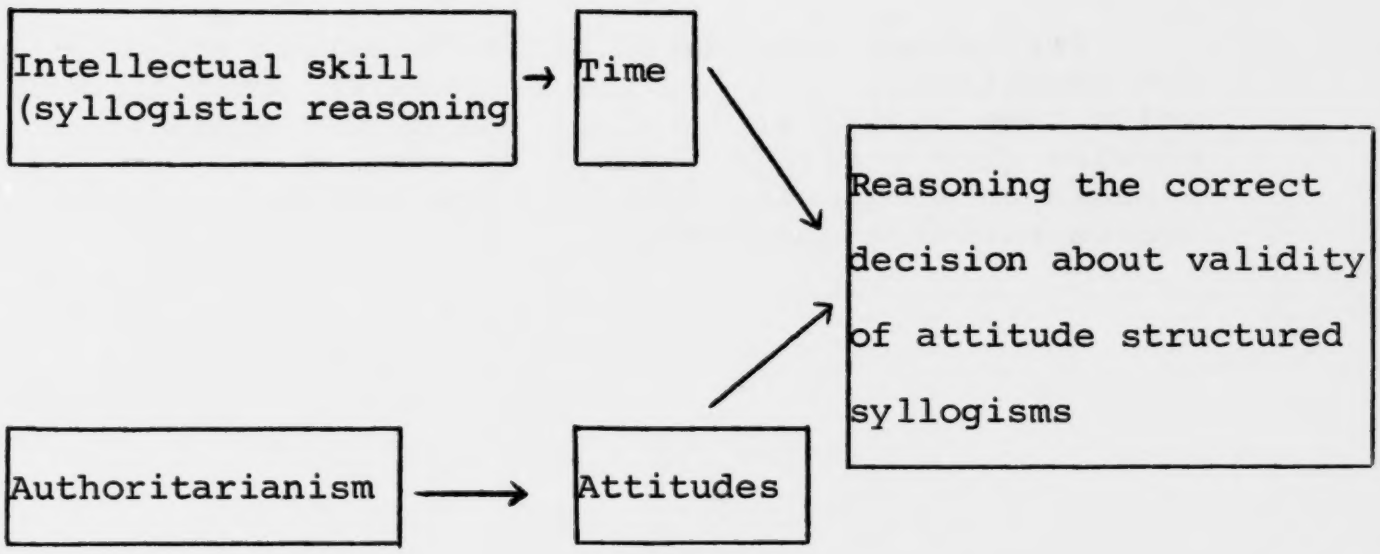

Figure 7. Relation of authoritarianism and time to intellectual skills and attitude in syllogistic decisions.

Operational hypotheses

1. There will be a significant difference in the reduction of attitude errors in attitude structured syllogisms between high and low authoritarian Ss.

2. The reduction of attitude errors will be greater immediately after the program than one week later.

Errors are considered attitude errors under either of two conditions: (1) if the S makes an error on a logically valid time (calls it invalid) and he disagrees with the conclusion (his attitude toward the conclusion), or (2) if the S makes an alogically invalid item (calls it valid) and he agrees with the conclusion.

Chapter Two

Methodology

Overall design

Early in the semester the groups to be used in the study were given the MTAI and the California F Scale as a part of the regular classroom assignments in educational psychology. The responses made to the items on the MTAI were filed to be used in determining the Ss attitude to conclusions on the Syllogism Test. The California F Scale was used to classify students as high or low authoritarians. The median score of the F Scale scores was determined and Ss were assigned to high or low authoritarian conditions. Within the authoritarian condition Ss were randomly assigned to the time condition so that one-half of the high authoritarians and one-half of the low authoritarians would take the Syllogism Test immediately after the programed instruction and one-half one week later.

About one-third of the way through the semester the groups were given the Syllogism Test to determine the performance level of the Ss. From two to four weeks after the syllogism Test the Ss were given programed instruction. The Syllogism Test and Set was administered according to the time condition.

The programed instruction booklets used in this study were developed as a part of a study by Wientge (1965). This program makes use of figural materials in the solutions of categorical syllogisms. The program was found to be successful in improving the ability to solve categorical syllogisms of valuative as well as non-valuative content.

The set induced in the experiment was a page of information explaining the possible influence of the emotional content of the syllogism on the decision of the validity or invalidity of the conclusion. (Appendix A)

A Syllogism Test was developed for the measure of the pre-test and post-test performance level. The conclusions of the syllogisms were taken from statements of the Minnesota Teacher Attitude Inventory. By comparison of the Ss response to the item on the MTAI and his decision as to the validity of the conclusion in the syllogism, the determination could be made if the correctness or incorrectness of his decision was congruent with his attitude about the conclusion. (Appendix B).

The Dependent Variable

The Syllogism Test was developed for a previous study by the investigator (Traylor, 1966). For a pilot study an instrument of sixty syllogisms was developed. The sixty syllogisms each had conclusions taken from the Minnesota Teacher Attitude Inventory. This plan was followed for two reasons. First, since the test was to be used for prospective teachers, the content of the syllogisms needed to be related to the field of teaching. The MTAI statements fulfilled this requirement. The second reason was that the Inventory provided a measure of the Ss attitudes toward the conclusion. The MTAI could be given to Ss in advance and without relating it to the Syllogism Test. This procedure would eliminate the possibility of an attitudinal set, if attitudes toward the conclusions were requested, either immediately prior to or following the Syllogism Test.

The syllogisms were constructed in accord with the rules of the categorical syllogism (McCall, 1952). The examiner analyzed and compared the syllogisms with the programed instruction procedure to be used in the study. Copies of the Syllogism Test were given to instructors of classes intended for a pilot study, soliciting their criticism of the instrument. An item analysis of the results was made of scores for two classes of educational psychology (N=56).

A "high-low" analysis was made. Total scores on the instrument were tabulated. The median was determined. Those scores above the median constituted the "high" group; those below, the "low" group. The analysis of each question was made in the following way. In the H column, the number of correct answers to each item by the High group is listed; the L column, the number of correct answers by the Low group. The H + L column determines the difficulty level of the item for the total group. The H - L column provides a "discriminantion index," that is, how many more of the high group than the low group answered the question correctly. McLaughlin (1964) suggests that an item which 90% of the class answers correctly is too easy (H + L column). If fewer than 30% answer correctly, it is too difficult. It is also suggested that for an item to be acceptable for inclusion in later tests, "high-low" difference should be equal to at least 10% of the size of the group. In this instance, the difference would be six. Not more than a fifth of the items in the final test should fall below this suggested standard. With these guides, forty items were retained.

The revised instrument, consisting of forty items was given to one class of educational psychology about one month after the original test was administered. A product-moment coefficient of correlation was obtained between the scores on the second test and the scores obtained on the same forty items of the sixty item test. This test-retest reliability correlation was .90.

After a review of the forty items, several were revised in language and form to fit more consistently with the structure of the syllogisms of the programed instruction. The final forty item Syllogism Test was an instrument suited to test the syllogistic reasoning ability of prospective teachers. The Ss used for the item analysis of the Syllogism Test were comparable to the Ss used in the experiment; they were college students enrolled in educational psychology and planning to teach. Since the conclusions of the syllogisms were taken from the MTAI, the syllogisms were attitudinally structured in that the Ss would have attitudes toward the conclusions.

The influence of the independent variables on the reduction of attitude errors was measured by the reduction of attitude errors from the pre-test to the post-test. Errors were classified as attitude errors after Janis and Frick (1943). They proposed that if one agreed with the conclusion of a syllogism, he would accept as valid, invalid arguments and if one disagreed with the conclusion, he would reject valid arguments. Specifically, errors of logically valid conclusions that the subject disagreed with are considered attitude errors. Ss attitudes toward the conclusions of the Syllogism Test items were obtained from their response to appropriate items of the MTAI. The correctness of their choice was determined by logical rules. Errors to valid items with which the S disagreed and to invalid items with which the S agreed were classified as attitude errors.

The induction of set

The statement of the influence of attitudes on reasoning was designed to increase the salience of the intellectual skills of reasoning in the S. The information provided to those Ss who received the set was a simple statement of the possibility of the attitudes held by the S toward the conclusion of the syllogism influencing the decision to call it valid or invalid. The suggestion was to resist the attitude influence and to reason carefully. The specific instructions are in Appendix A.

The programed instruction

The programed instruction booklet was developed by Wientge (1965) in a study of teacher decision making. The programed instruction used in the study was the Three Circle Technique which uses Euler diagrams to demonstrate relationships between the premises. This program was demonstrated to be effective in developing and improving syllogistic reasoning ability in cases where the syllogisms were not attitudinally structured. An illustration of the program is provided in Appendix C.

The Sample

A total of three classes and 100 Ss at Wichita State University were used. The classes were composed of men and women, elementary and secondary education students and were of upper-division standing. All of the classes were educational psychology and all taught by the same instructor.

Each of these classes had been given the Minnesota Teacher Attitude Inventory and the California F Scale prior to the administration of the syllogism pre-test as a part of the regular class procedure. About one month later the syllogism test was administered as a pre-test of syllogistic reasoning ability of attitude structured syllogisms. The Ss were assigned to high and low authoritarian conditions on the basis of F Scale Scores. Ss in each of these conditions were given the programed instruction about four weeks later (two weeks in the case of one group) they then took the post Syllogism Test according to the time condition. The format of the class facilitated the irregularity of the classes. After completion of the program, Ss were instructed to leave the room to go to audio-visual instruction or another room where they received the Syllogism Test. Ss were instructed on the basis of their previous assignment to the time condition. One week later, Ss were reversed in their activities.

In the event that one of the classes had an unequal number of Ss in any of the four experimental conditions because of absences or class size, the number of cases in each experimental condition was equalled by random elimination of cases.

Chapter Three

Findings and Analysis

The findings presented are in two general parts. First the analysis of data related to the specific hypotheses of the study. The second classification of findings will be some of the additional analyses made to help clarify and extend the findings. First will be a covariance analysis of a 2 x 2 table for the 100 Ss with the conditions authoritarianism and time. A second covariance analysis will be made of these same conditions using only the Ss having the high 30% and low 30% on the F Scale.

To determine the influence authoritarianism has on reasoning about both attitude and non-attitude errors, an analysis of variance was made on the initial errors for the high - low authoritarian condition.

To determine the influence of instruction on the reduction of errors for high - low authoritarian condition, an analysis of variance was made of the pre - post errors for the Ss in the immediate time condition.

Major findings and discussion

The findings relate to the major hypotheses of the study. It was conceptualized that the attitudes of high authoritarians would be more salient than low authoritarians and they would make more errors in their reasoning about attitude relevant syllogisms. (See Figure 7) Table 1 and 2 presents findings relevant to their conceptualization.

Insert Table 1 & 2 about here

Table 1 does not support the conceptualization when using all 100 Ss. However, Table 2 does.

Table 1

High Authoritarian-Low Authoritarian
Analysis of Variance of Attitude Errors: 100 Ss

Source of Variation	SS	df	MS	F
Between	36.00	1	36.00	2.50
Within	1410.24	98	14.39	
Total	1446.24	99		

Table 2

High Authoritarian-Low Authoritarian
Analysis of Variance of Attitude Errors: High 30 percent and low 30 percent

Source of Variation	SS	df	MS	F
Between	141.61	1	141.61	5.51 *
Within	2519.14	98	25.70	
Total	2660.75	99		

*Significant at 5% level of confidence

These findings suggest that when we compare the 30 percent highest and 30 percent lowest in authoritarianism significantly more attitude errors are made by the high group.

It is appropriate to note that for the group of 100 Ss the mean score on the F scale was considerable below average. F Scale Scores (See Appendix D) of the Ss were not high. By considering the top 30% the authoritarian measure was more apparent.

The major hypotheses of the study suggests that there will be a significant difference in the reduction of attitude errors between high and low authoritarians and the high-low authoritarian component of the covariance analysis presented in Tables 3 and 4 relates to this hypothesis. Table 3 is the analysis of all 100 Ss.

Insert Tables 3 and 4 about here

Table 4 is an analysis of 60 percent of the Ss, omitting 40 percent of the Ss whose California F Scale scores were nearest the median. It was again felt this sample would increase the saliency of the authoritarian effect.

The analyses support the hypothesis that there would be a significant difference in the reduction of attitude errors between high and low authoritarians. The reduction was significant because of the high number of attitude errors made initially by the high authoritarians group. In our initial conceptual analysis, while it was suggested that the high authoritarians would make more attitude errors, it was also suggested that the instruction would be less effective for the high Ss. This does not appear to be true. This will be discussed later.

The second hypothesis suggested that the reduction of attitude errors would be significantly different for Ss taking the Syllogism Test immediately after the program and Ss taking the Test one week after the program. Table 3 and 4 summarize the analysis of these data.

While there is no significant difference in the attitude errors of Ss over a period of one week, a possible explanation is apparent. Conceptually it was suggested that the intellectual skills developed by the program would reduce with time and the influence of this skill in decisions about validity of syllogisms would be reduced.

Table 3

Analysis of Covariance of Attitude errors for 100 Ss.

	SS	df	V	F
Authoritarianism: high-low	20.85	1	20.85	5.33*
Time: immediate - one week	.02	1	.02	
Interaction	3.28	1	3.28	
Within: Sum of Squares of Errors of Prediction	372.10	95	3.91	

*Significant of 5% level

Table 4

Analysis of Variance of Attitude errors for High and Low Authoritarianism -- high 30 percent and low 30 percent

Source of Variation	SS	df	MS	F
Between Group	72.60	1	72.60	4.27*
Within Group	986.34	58	17.00	
Total	1059.00	59		

*Significant at 5% level.

Table 5

Analysis of Covariance of Non-Attitude errors for 100 Ss

	SS	df	V	F
Authoritarianism: high-low	5.93	1	5.93	2.02
Time: immediate - one week	.63	1	.63	
Interaction	59.99	1	59.96	20.47*
Within: Sum of Squares of Errors of Prediction	279.37	95	2.93	

*Significant at greater than 1% level

Table 6

Analysis of variance of low authoritarian Ss of non-attitude errors

	SS	df	MS	F
Pre-Post errors	18.81	1	18.81	5.22*
Immediate-Delay	9.61	1	9.61	2.66
Interaction	36.03	1	36.03	10.00**
Within	346.30	96	3.60	
Total	410.75	99		

* Significant at 5% level

** Significant at 1% level

(Figure 7). From the results of Table 3 and 4 it would appear this is not true. A methodological step is recalled.

After the programed instruction Ss were given the Syllogism Test immediately or one week later. In each case, the Syllogism Test was preceded by a "set", written instructions on the possible influence of attitudes on reasoning. Previous work (Traylor, 1968) demonstrated the "set" influenced the reduction of attitude errors contributed to the reduction of attitude errors equally both immediately and after one week, confounding the meaning of the results.

The study reported earlier (Traylor, 1968) found instruction, but not set, a significant influence on the reduction of non-attitude errors. To determine the influence of time on the intellectual skills strengthened by the program, an analysis of non-attitude errors was made. The results are presented in Table 5.

A description of the data in the four cells of the 2 x 2 table produces an unusual phenomenon. While the time condition is not significant as hypothesized when considering high and low authoritarians together (nor is there a difference between the high-low authoritarian condition) the interaction is highly significant. The cell containing high authoritarian - immediate showed a decrease of 10 errors from pre to post test; the high authoritarian - delay, a decrease of 30. Low authoritarian - immediate showed a decrease of 36 errors from pre test to post test; low authoritarian - delay, decrease of 5. (For the high 30% and low 30% the decrease on errors from pre to post test emphasizes this phenomenon with error reductions of 1, 21, 18, 3 respectively.

For low authoritarians our hypothesized relationship seems to be true. The intellectual skills strengthened by the program instruction resulted in a decrease in the non-attitude errors immediately after the instruction. The skills did, however, weaken with time resulting in little difference in pre test and post test one week later. The reverse seemed true for the high authoritarians. The program had little effect on the reduction of non-attitude errors immediately but seemed to be stronger one week later. Speculatively, one might suggest that high authoritarians, finishing an intellectual exercise, the programed instruction, and receiving a set about attitudes influencing reasoning experienced some what of a conflict and resolved it in favor of the "set"--reducing attitude errors. One week later, the conflict was some what reduced and the intellectual skills tended to have more influence.

Additional analyses were made of the 50 Ss in the low authoritarian group on non-attitude errors. A two-way analysis of variance of pre - post errors and immediate-delay time. The results of this analysis is presented in Table 6. A significant difference in pre - post errors is presented. There is no difference in the time conditions but a highly significant interaction is present. The error reduction from the immediate pre test to post test is from 92 to 56; the error reduction of the delay pre test to post test is from 61 to 56. It does appear that time does decrease the effectiveness of the program however our significant interaction is perhaps explained by the difference in the pre test non-attitude errors of the immediate and delay conditions -- 92 and 61 respectively.

A Chi-square test was employed to determine if the differences in the pre test errors between the immediate and delay groups was no greater than chance. The chi-square value of 5.88 (greater than 5%, less than 1%) suggests that perhaps the random assignment of Ss to the time condition resulted, in effect, in a biased assignment with Ss in the delayed time group heaving greater reasoning skills. (See Table 7 and 8).

Insert Table 7 & 8 about here

Table 7

Non-attitude errors for pre test of Ss in immediate and delayed time

	Immediate	Delay
Number of errors in each time condition	92	61
% of errors in each time condition if random distribution	50%	50%

Table 8

Observed and Expected frequencies for the One Sample Chi Square Analysis

Immediate Pre Test Errors	Delay Pre Test Errors
(76.5)	(76.5)
92	61

Chapter Four

Conclusions and Recommendations

Conclusions

Ss high in authoritarianism make more attitude errors in reasoning. Instruction and set reduce attitude errors in reasoning for both high and low authoritarians. The reduction is greatest for high authoritarians since they make more attitude errors initially. Time did not influence the reduction of attitude errors. It was suggested that methodology was perhaps an explanation in that the "set" was administered to both of the "time" condition groups. Time seems to reduce the influence of instruction on the reduction of non-attitude reasoning errors for low authoritarians but the reverse seems to be true for high authoritarians.

Recommendations

Recommendations of two types are suggested. First additional research seems appropriate. The set-time influence should be investigated. As suggested in the findings, the methodology of having the "set" induced immediately before the post syllogism test may have cluttered the results since the "set" was significant in reducing attitude errors. To determine the influence of the set on the authoritarian condition, high-low authoritarian Ss could be given the set or no set. This should answer the speculation about the influence of "set" on high authoritarians.

Another question is raised by the sample. Authoritarianism seemed to contribute to making attitude errors. However, the sample did not contain "high" authoritarians--scores 120 and above. It would be valuable to use a sample of Ss with F Scale scores of 120 and above.

The influence of time on the reduction of the effectiveness of the intellectual skills developed by programed instruction should be studied without the "set" element. While it appears that this is true, a more careful analysis could be made if the conditions were not complicated by irrational factors as represented by the attitude structured syllogisms and "set".

The other type of recommendations relate to the possibility of integrating the findings into practice. Prospective teachers should be aware of the influence of their feelings on the decisions they make. The "awareness" provides a kind of "set" which should enable them to control the affective influence and make decisions based upon relevant cognitive factors. When prospective teachers are high in authoritarianism, this awareness is more essential but will still be important.

Generally it would seem that an appropriate admonition to prospective teachers is "know thyself." In this way one is more likely to be "aware" of his feelings and consequently "control" them. This suggestion is in itself an appropriate concept for research. Do teachers who have more realistic self concepts enjoy the ability to make more valid decisions? Do they, in effect, utilize what they "know" more than teachers with unrealistic self concepts.

As an after thought, the affective system (attitudes, values, etc.) needs rather extensive study in its relation to the classroom behavior of teachers. The pervasive norm system of a school, the teachers status in it and its influence on the strategies employed would be instructive and profitable to study. The feelings associated with colleague approval and the behaviors designed to elicit this approval would be beneficial to our understanding of the pervasiveness and intensity of the affective element in decision making.

The possibility of training prospective teachers with specific teaching skills to be drawn on and initiated when faced with spontaneous classroom situations is suggested. When an emotion provoking experience (of a disciplinary nature for instance) occurs, instead of responding in kind (emotionally) the previously learned habit could be employed. This suggestion has implications for developing intense self awareness on the part of the teacher, knowing what is likely to provoke anger, fear, etc., and developing alternative responses to these feelings.

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APPENDIX A

You are about to do some reasoning exercises. In all reasoning exercises one must be careful to see that the conclusions follow logically from the premises. However in some of the following exercises it may be more difficult to reason carefully because of your feelings about the conclusions. Studies of reasoning have indicated that it is possible to have one's reasoning distorted, even though he is unaware of it, because of our feelings about the content of the conclusion. For example:

Premises: Every Communist is pro labor.
No good American is anything that a Communist is.

Conclusion: No good American is pro labor.

In reasoning about the conclusion one might tend to "automatically" disagree with the conclusion and call it invalid because of their feelings about the content of the conclusion. Your task is to reason the validity or invalidity of the conclusion based on the premises. REMEMBER, DO NOT LET YOUR REASONING BE INFLUENCED BY YOUR FEELINGS ABOUT THE CONCLUSION. <u>REASON CAREFULLY</u>.

APPENDIX B

You are about to do some reasoning exercises. In all reasoning exercises one must be careful to see that the conclusions follow logically from the premises. However in some of the following exercises it may be more difficult to reason carefully because of your feelings about the conclusions. Studies of reasoning have indicated that it is possible to have one's reasoning distorted, even though he is unaware of it, because of our feelings about the content of the conclusion. For example:

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1. Unpleasant situations should sometimes be turned into jokes.
Minor disciplinary situations are unpleasant situations.

   Minor disciplinary situations should sometimes be turned into jokes. valid ( ) invalid ( )

2. Minor disciplinary situations are not those which require helpful teaching techniques.
Making a joke of a problem is a helpful teaching technique.

   Minor disciplinary situations should be turned into jokes.
   valid( ) invalid ( )

3. Propriety is preferable to boldness.
Shyness is propriety.

   Shyness is preferable to boldness.
   valid ( ) invalid ( )

4. All occupations that involve repetitious activities and routines are monotonous.
Teaching is an occupation that involves repetitious activities and routine.

   Teaching never gets monotonous.
   valid ( ) invalid ( )

5. Conformity is unquestioning obedience in a child.
Conformity is not desirable.

Unquestioning obedience in a child is not desirable
valid ( ) invalid ( )

6. Prompt obedience is a first lesson to learn.
Opportunities are situations that are lost by hesitation

The first lesson a child needs to learn is to obey the teacher without hesitation. valid ( ) invalid ( )

7. All people who are spontaneous, moody, and uncertain of themselves are difficult to understand these days.
Young people are spontaneous, moody, and uncertain of themselves.

Young people are difficult to understand these days.
valid ( ) invalid ( )

8. Children's wants are many and varied.
Adults' wants are different from children's.

Children's wants are just as important as adults'.
valid ( ) invalid ( )

9. Insecure and uncertain children are usually overconfident of their ability.
The boastful child is insecure and uncertain.

The boastful child is usually overconfident of his ability.
valid ( ) invalid ( )

10. All children have certain natural tendencies.
All children are unruly.

All children have a natural tendency to be unruly.
valid ( ) invalid ( )

11. Good students ask too many questions.
Some children are good students.

Some children ask too many questions.
valid ( ) invalid ( )

12. Organization, planning and control are requirements for maintaining discipline in the classroom.
Only a "hardboiled" teacher has organization, planning and control.

To maintain good discipline in the classroom a teacher needs to be "hardboiled."
valid ( ) invalid ( )

13. A student tries to avoid failure.
A student is attracted to success.

Success is more motivating than failure.
valid ( ) invalid ( )

14. Good discipline is needed today.
"Old fashioned whippings" result in good discipline.

More "old fashioned whippings" are needed today.
valid ( ) invalid ( )

15. Events that interfere with learning are the teacher's greatest worry.
Discipline problems interfere with learning.

Discipline problems are the teacher's greatest worry.
valid ( ) invalid ( )

16. Loud and unpredictable behavior are the greatest problems.
Agressive children are loud and unpredictable.

Agressive children are the greatest problems.
valid ( ) invalid ( )

17. Prevention of discipline problems is a responsibility of the teacher.
Correction of discipline problems is a responsibility of the teacher.

It is easier to correct discipline problems than it is to prevent them.
valid ( ) invalid ( )

18. Poor families are too carefree.
Children are from poor families.

Children are too carefree. valid ( ) invalid ( )

19. Assigning unpleasant tasks is an effective means of punishment.
School work is an unpleasant task.

Assigning additional school work is often an effective means of punishment. valid ( ) invalid ( )

20. Maturity and purposefulness are usually qualifications for selecting topics for themes and reports.
Pupils do have maturity and purposefulness.

Pupils usually are not qualified to select their own topics for themes and reports. valid ( ) invalid ( )

21. People with limited backgrounds usually find it hard to follow instructions.
Children have limited backgrounds.

Children usually have a hard time following instructions.
valid ( ) invalid ( )

22. Some modern educational practices lower achievement standards.
Universal promotion of pupils is a modern educational practice.

Universal promotion of pupils lowers achievement standards.
valid ( ) invalid ( )

23. Throwing chalk and erasers is undesirable behavior.
Severe punishment deters undesirable behavior.

Throwing chalk and erasers should always demand severe punishment. valid ( ) invalid ( )

24. Superintendents are impressed by teachers who are liked best.
Superintendents are impressed by teachers who probably have a better understanding of pupils.

Teachers who are liked best probably have a better understanding of their pupils.
valid ( ) invalid ( )

25. People who are overly concerned about their personal activities can be very boring at times.
Pupils are overly concerned about their personal activities.

Pupils can be very boring at times.
valid ( ) invalid ( )

26. Asking questions about embarrassing topics is typical of all children.
Questions about sex are embarrassing.

Children have no business asking questions about sex.
valid ( ) invalid ( )

27. All annoying activities in the classroom should not be tolerated.
Whispering is an annoying activity in the classroom.

Whispering should not be tolerated.
valid ( ) invalid ( )

28. Purposelessness and indifference are probably the most frequent causes of failure.
"Lack of application" is a part of purposelessness and indifference.

"Lack of application" is probably one of the most frequent causes of failure.
valid ( ) invalid ( )

29. Teachers are people who are interested in pupil independence.
Leaving a class to its own management is a form of pupil independence.

A teacher should never leave a class to its own management.
valid ( ) invalid ( )

30. Inability of others to understand us certainly tries our patience.
Slow pupils are unable to understand us.

Slow pupils certainly try our patience.
valid ( ) invalid ( )

31. Pupils like to cut up in class.
Cutting up in class annoys the teacher.

Pupils like to annoy the teacher.
valid ( ) invalid (

32. Antisocial behavior should be severly punished.
Writing obscene notes is antisocial behavior.

A pupil found writing obscene notes should be severely punished. valid ( ) invalid ( )

33. Well-to-do families give too much freedom today.
Children come from well-to-do families.

Children today are given too much freedom.
valid ( ) invalid ( )

34. People who are sympathetic and kind should be able to get along with almost any child.
No teachers are sympathetic and kind.

Teachers should be able to get along with almost any child.
valid ( ) invalid ( )

35. Shy and reticent children should be given an opportunity to recite oftener.
A child who stutters is not shy and reticent.

A child who stutters should be given an opportunity to recite oftener. valid ( ) invalid ( )

36. Loud, distracting influences are conditions that require the most attention.
Aggressive children are loud, distracting influences.

Aggressive children require the most attention.
valid ( ) invalid ( )

37. Ability to reason adequately is part of inexperience.
Children are inexperienced.

Children are unable to reason adequately.
valid ( ) invalid ( )

38. Conditions that result in student control and respect are needed today.
More "old fashioned whippings" result in student control and respect.

More "old fashioned whippings" are needed today.
valid ( ) invalid ( )

39. Increased freedom in the classroom never causes disorganization.
Disorganization is a condition which creates confusion.

Increased freedom in the classroom creates confusion.
valid ( ) invalid ( )

40. Inability of others to understand one certainly tries one's patience.
Slow pupils are unable to understand one.

Slow pupils certainly try one's patience.
valid ( ) invalid ( )

APPENDIX C

An Example of one Page of the Program

THE (3) (THREE CIRCLE) TECHNIQUE:

Step 1: Underline the 3 main ideas which are found in the two premises of the syllogism.

Step 2: Diagram the relationship (All, no, or some) of the ideas found in the <u>first</u> premise using two circles.

Add to the same diagram a circle which expresses the relationship of the ideas found in the <u>second</u> premise.

Step 3: Check the conclusion against the diagram for validity.

In brief, the 3 TECHNIQUE IS:

1. _____ ideas.

2. _____ relationships (premises).

3. _____ conclusion.

Fill in with one word the blanks in 2 and 3.

APPENDIX D

Range of California F Scale Scores for 100 Ss

130

123

119, 119

117, 117, 117

116

115

114

109

107

106, 196

101

100

99

98, 98, 98, 98, 98

97

96, 96

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94, 94

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91, 91, 91

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89, 89, 89

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86, 86

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83, 83

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79, 79

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74, 74

71, 71, 71, 71

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68, 68

67, 67, 67, 67, 67, 67, 67

64, 64

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59, 59, 59

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